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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/864,017
Filing Date: May 23, 2001
Appellant(s): VANTTINEN ET AL.

Geza C. Ziegler, Jr.
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed January 27, 2006 appealing from the Office action mailed August 24, 2005.

(1) Real Party in Interest

The statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct. The change is as follows:

Claim 33-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Jokiaho et al (US 5,889,770).

Claims 27-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Havinis et al (US 6,671,377 B1), further in view of Jokiaho et al (US 5,889,770), and further in view of Barnes et al (US 6,711,147 B1).

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

U.S. patents cited by the examiner in the rejection of the Final Office action under appeal.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim 33-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Jokiaho et al (US 5,889,770).

a. *Referring to claim 33:*

i. Jokiaho teaches:

(1) means for receiving a notification from a cellular network about a location information request, means for responding to the cellular network with a notification response, and means for notifying a packet data device, which is either an integral part of the mobile station or attached to the mobile station, about the location information request **[i.e., the extra signalling caused by location updating can be diminished by providing the data packets arriving at the data service center from a mobile station with the identifier of the cell or group of cells from which the mobile station transmitted them. The data service center compares the identifier of the cell or group of cells contained by the received data packet with a previous identifier stored in the data service database, and if it notices that the identifier has changed, it updates the location data of the mobile station in the database with the new identifier. This procedure makes it possible to significantly diminish or even entirely avoid the signalling relating to location updating during packet data transmission. The mobile station itself or the mobile communication network may insert the required identifier in a data packet before the data packet is transmitted to the data service center (column 3, lines 57-67 through column 4, lines 1-5)].**

b. *Referring to claim 34:*

i. Jokiaho further teaches:

(1) wherein the means for responding to the cellular network are arranged to be initiated by a permission sent by the packet data device **[i.e., the purpose of the data service center AGENT is to provide advanced services without overloading the capacity of the mobile services switching center MSC or the base station controller BSC. The transmission of packets to and from the data service center is carried out in a transparent manner. The mobile services switching center MSC and the base station controller BSC route the packet data without handling it any further. The packets are opened and handled in the data service center only (column 5, lines 28-35)].**

Claims 27-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Havinis et al (US 6,671,377 B1), further in view of Jokiaho et al (US 5,889,770), and further in view of Barnes et al (US 6,711,147 B1).

a. *Referring to claim 27:*

i. Havinis further teaches:

(1) means (960) for receiving information about a location information request and about a sender of a location information request from the mobile station **[i.e., referring to Figure 3, when a positioning request 285 for a particular target Mobile Station (MS) 20 is received by a Serving Mobile Location Center (SMLC) 270 serving a cell 22 within the Public Land Mobile Network (PLMN) 10 that the MS 300 is currently located in, the SMLC 270 must choose the optimum positioning method available (column 4, lines 30-47)]** and

(2) means (970) for exchanging with a network element connected to a cellular network information about a security association, which points to the network element from the sender of the location information request **[i.e., referring to Figure 4, when an MS 20 needs to obtain network information 210 in order to position itself, the MS 20 can send a mobile originating request for assistance data 215, which requests from the network 10 a location deciphering key K.sub.L and includes a positioning indication 218 that indicates to the network 10 the number and/or duration of the positionings that the MS 20 will be performing, to the MSC 14. In response to the request for assistance data 215, the MSC 14 sends a Security-Related_Information_Request 219, which includes the positioning indication 218, to a Home Location Register (HLR) 26 associated with the MS 20. The HLR 26 preferably has an Authentication Center (AuC) 27 attached thereto. The AuC 27 fetches a subscriber identification key K.sub.i stored within a subscriber record 29 associated with the MS 20 from the HLR 26 and uses this identification key K.sub.i together with a non-predictable random number RAND and the positioning indication 218, which indicates the number of positioning requests, as an input to a ciphering algorithm 28, which corresponds to the deciphering algorithm 255 supported by the MS 20, to derive the location**

deciphering key K.sub.L. The location deciphering key K.sub.L is sent back to the MSC 14 for use, by the BSC 23, in encrypting the network information 210. This encrypted network information 320 is transmitted to the MS 20 over, for example, a Broadcast Control Channel (BCCH) 21 (column 5, lines 37-62)].

ii. Although Havinis is silent about the mobile network connects to a packet data network, Jokiaho teaches:

(1) The mobile station MS using the packet data service monitors the control channels of the mobile communication network and makes an independent decision on location updating. An algorithm especially intended for the location updating of the data service is used in the decision-making. This algorithm can be based for instance on the level of a signal received by the mobile station, the quality of a signal (for instance the bit error rate), other corresponding criteria or the different combinations thereof. In order to prevent back-and-forth location updatings between two cells in their boundary area, the criteria used in decision-making are determined in such a manner that there is hysteresis in the boundary areas of the cells during location updating, i.e. the location updating criteria from a cell to another are different in one direction than in the opposite direction. The location updating can alternatively be carried out every time the mobile station MS performs a cell crossover or handover in the mobile communication network according to the normal procedures of the mobile communication network. If a mobile station has data to be transmitted when it is crossing a cell boundary, the mobile station transmits a normal information packet after the connection with the new cell has been established. The data packets transmitted between the mobile station MS and the packet service center AGENT 19 consist of a mobile station identifier MS ID, a possible control information field CONTROL, and a data field DATA, as illustrated in FIG. 5. If the data service center is connected with a mobile services switching center MSC, as the data service center AGENT 19, the base station system, usually the base station controller BSC, adds to the data packet, such as shown in FIG. 5, received from the mobile station MS the cell identifier of the cell from which the data packet was received, and forwards the resulting data packet, such as shown in FIG. 4, to the data service center AGENT 19. Correspondingly, when the

data service center, such as the AGENT 19', is connected with a base station controller, the base station controller provides the data packet to be transmitted to the data service center with the cell identifier CELL ID of the cell from which the packet was received. If the packet service center is connected directly to a base station BTS, as AGENT 19 by the dashed line 21, the situation may be slightly different. In this case, the mobile station MS provides the data packet with a cell identifier CELL ID and transmits the data packet according to FIG. 4. The mobile station is informed of which base station it is registered in by system information transmitted on common downlink control channels. When the data service center AGENT 19 receives the data packet according to FIG. 4, it compares the cell information CELL ID contained by the data packet with the location data of the mobile station MS stored in the data service database 22, this location data also being a cell identifier CELL ID. If the received cell identifier is different, the data service center updates the location data of the mobile station MS in the database 22 with this new cell identifier. With this updating method based on the cell identifier in a data packet, it is possible to avoid the transmission of separate updating control messages and thus to save frequency band on the radio interface as well as the data processing capacity required by the data service center AGENT 19 **(column 8, lines 27-67 through column 9, lines 1-20).**

iii. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to:

(1) have applied Jokiaho's teaching of the packet data service monitor for tracking the location data of the mobile station within Havinis' mobile communication network in order to maintain and update location data of the mobile station in the data service database with an accuracy of one cell or group of cells, and transmit data packets and messages to the mobile station only via the cell or group of cells indicated by the location data contained in the data service user database **(column 2, lines 58-64 of Jokiaho).**

iv. The ordinary skilled person would have been motivated to:

(1) have applied Jokiaho's teaching of the packet data service monitor for tracking the location data of the mobile station within Havinis' mobile

communication network to provide separate location management and location updating for packet data transmission in addition to the normal location management and location area configuration of a mobile communication system **(column 3, lines 20-24 of Jokiaho).**

v. Though the combination of teaching between Havinis/Jokiaho teaches the claimed subject matter, they do not explicitly mention the security association as a set of Internet Security Associations. However, on the other hand, Barnes teaches:

(1) Mobile IP has a process called "IP Security." IP security is a tunneling security context between a pair of nodes. For example, IP Security may use a Security Parameters Index for identifying a security context between a pair of nodes among the contexts available in the mobility security association, which is the internet security association **(column 4, lines 13-18)**. Furthermore, a GPRS network may include a first base station for providing wireless access to a mobile node, a GPRS support node (GSN) connected to the base station, and a security gateway for connecting the GPRS network to a second network that may use the mobile internet protocol **(column 4, lines 31-35).**

vi. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to:

(1) include the security association within the mobile communication network, especially the mobile IP/packet data network to easily track the location of the mobile station

vii. The ordinary skilled person would have been motivated to:

(1) include the security association within the mobile communication network, especially the mobile IP/packet data network so that a mobile node may seamlessly roam between a wireless network and a mobile IP network and that the location calculation of a mobile station can be performed.

b. *Referring to claims 28-30:*

i. These claims consist a a packet data device (950) being an integral part of a mobile station with related to security association to implement claim 27 and are rejected by the same prior art of record.

c. *Referring to claim 31:*

i. Havinis further teaches:

(1) further comprising means for locating itself **[i.e., Thus, if the MS 20 has terminal-based positioning capabilities, along with terminal-based location calculation abilities, when the SMLC 270 receives the positioning request 285, the SMLC 270 can opt to allow the MS 20 to both obtain positioning measurements and to calculate it's own location based upon those positioning measurements (column 5, lines 20-27. In addition, As shown in FIG. 4A of the drawings, when an MS 20 performs its own location calculation, the MS 20 does not need to involve the network 10 in the positioning process except to obtain access to network information 210, e.g., BTS 24 coordinate information, for each positioning or for a period of continuous positioning. Thus, when an MS 20 needs to obtain network information 210 in order to position itself, the MS 20 can send a mobile originating request for assistance data 215, which requests from the network 10 a location deciphering key K.sub.L and includes a positioning indication 218 that indicates to the network 10 the number and/or duration of the positioning that the MS 20 will be performing, to the MSC 14 (column 5, lines 31-44)].**

d. *Referring to claim 32:*

i. Havinis further teaches:

(1) comprising a Global Positioning System receiver **[i.e., multiple reference GPS receivers 700 and 705 are spaced throughout the PLMN 10 in order to provide accurate assistance GPS data to GPS receivers 710 within or attached to MS's 20 (column 8, lines 58-61)].**

(10) Response to Arguments

I. Regarding to the Appellant's arguments to claim 33 that Jokiaho does not disclose or suggest a mobile station having means for receiving a notification from a

cellular network about the location information request and means for notifying a packet data device, which is either an integral part of the mobile station or attached to the mobile station, about the location information request. First of all, Jokiaho teaches a location management method is provided for packet data transmission in a mobile communication system. To reduce the amount of signalling for location management concerning packet transmission compared to location management concerning normal traffic, location data of the mobile stations utilizing a data service is updated in a special data service user database. Packets to these mobile stations are sent via the cells as indicated by location data in that database. The database resides in a data service center which interfaces a data network (see abstract of Jokiaho). In addition, Jokiaho teaches the extra signalling caused by location updating can be diminished by providing the data packets arriving at the data service center from a mobile station with the identifier of the cell or group of cells from which the mobile station transmitted them. The data service center compares the identifier of the cell or group of cells contained by the received data packet with a previous identifier stored in the data service database, and if it notices that the identifier has changed, it updates the location data of the mobile station in the database with the new identifier. This procedure makes it possible to significantly diminish or even entirely avoid the signalling relating to location updating during packet data transmission. The mobile station itself (e.g., including integral part) or the mobile communication network may insert the required identifier in a data packet before the data packet is transmitted to the data service center (column 3, lines 57-67 through column 4, lines 1-5). Thus, Jokiaho teaches the claimed subject matter.

II. Regarding to the Appellant's arguments to claim 34 that Jokiaho does not disclose or suggest of a permission sent by the packet data device. First of all, a user of a mobile station cannot use the mobile station without even registering their ID with the data service center. At the moment of registration, the data service center AGENT 19 assigns the mobile station a mobile station identifier. This identifier is unique within the entire service area of the service center for allowing or permitting the owner of the mobile station who has been registered with the service center to operate that particular

mobile station (column 7, lines 47-65 of Jokiaho). Thus, Jokiaho teaches the permission sent by the packet data device residing within the mobile station itself.

III. Regarding to the Appellant's arguments to claim 27 that neither Havinis, Jokiaho nor Barnes discloses or suggests data packet device being an integral part of a mobile station or being attachable to a mobile station. This argument is similar to that of claim 33 above, therefore it is rejected with the same reasons as given above for claim 33.

IV. Regarding to the Appellant's arguments to claims 28-29 that neither Havinis, Jokiaho nor Barnes discloses or suggests any type of security association between the two. Though the combination of teaching between Havinis/Jokiaho teaches the claimed subject matter, they are silent on the capability of using the security association as a set of Internet Security Associations. However, on the other hand, Barnes teaches mobile IP has a process called "IP Security." IP security is a tunneling security context between a pair of nodes. For example, IP Security may use a Security Parameters Index for identifying a security context between a pair of nodes among the contexts available in the mobility security association, which is the internet security association (column 4, lines 13-18 of Barnes). Furthermore, a GPRS network may include a first base station for providing wireless access to a mobile node, a GPRS support node (GSN) connected to the base station, and a security gateway for connecting the GPRS network to a second network that may use the mobile internet protocol (column 4, lines 31-35 of Barnes).. Thus the combination of teachings between Havinis, Jokiaho, and Barnes teaches the security association.

Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). Examiner believes that the combination of Havinis, Jokiaho, and Barnes is sufficient.

For the above reasons, it is believed that the rejections for claims 27-34 should be sustained.

V. The arguments on claims 1-26 are persuasive and allowable over the prior art of record.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Respectfully submitted,

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March 27, 2006

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